LISTING OF THE CLAIMS:

The current claim set should replace any claim set of record.

Claim 1. (Previously presented): A method of inducing osteoblastic differentiation and inhibiting adipocyte differentiation of mammalian mesenchymal stem cells (MSCs) comprising treating mammalian MSCs with at least one oxysterol,

wherein the at least one oxysterol is selected from the group consisting of 20S-hydroxycholesterol, 22S-hydroxycholesterol, 22R-hydroxycholesterol and 25-hydroxycholesterol, or an active portion of any one of 20S-hydroxycholesterol, 22S-hydroxycholesterol, 22R-hydroxycholesterol, or 25-hydroxycholesterol; and

wherein the MSCs are treated with the at least one oxysterol under conditions that are effective to induce osteoblastic differentiation and to inhibit adipocyte differentiation of the MSC.

Claim 2. (Canceled):

Claim 3. (Previously presented): The method of claim 1, wherein the at least one oxysterol is a combination of oxysterols selected from the group consisting of 20S-hydroxycholesterol and 22R-hydroxycholesterol, and 20S-hydroxycholesterol and 22S-hydroxycholesterol.

Claim 4. (Withdrawn – Previously presented): The method of claim 1, further comprising treating the mammalian MSCs with at least one secondary agent selected from the group consisting of parathyroid hormone, sodium fluoride, insulin-like growth factor I, insulin-like growth factor II and transforming growth factor beta.

Claim 5. (Withdrawn – Previously presented): The method of claim 1, further comprising treating the mammalian MSCs with at least one secondary agent selected from the group consisting of cytochrome P450 inhibitors, phospholipase activators, arachadonic acid, COX enzyme activators, osteogenic prostanoids and ERK activators.

Claim 6. (Previously presented): A method of stimulating mammalian cells to express a level of

a biological marker of osteoblastic differentiation which is greater than the level of a biological marker in untreated cells, comprising exposing a mammalian cell to a selected dose of at least one oxysterol,

wherein the at least one oxysterol is selected from the group consisting of 20S-hydroxycholesterol, 22S-hydroxycholesterol, 22R-hydroxycholesterol and 25-hydroxycholesterol, or an active portion of any one of 20S-hydroxycholesterol, 22S-hydroxycholesterol, 22R-hydroxycholesterol, or 25-hydroxycholesterol,

thereby resulting in a level of expression of a biological marker of osteoblastic differentiation which is greater than the level of a biological marker in untreated cells.

Claim 7. (Canceled):

Claim 8. (Previously presented): The method of claim 6, wherein the at least one oxysterol is a combination of oxysterols selected from the group consisting of 20S-hydroxycholesterol and 22R-hydroxycholesterol, and 20S-hydroxycholesterol and 22S-hydroxycholesterol.

Claim 9. (Withdrawn – Currently amended): The method of claim 6, further comprising treating the mammalian ~~mesenchymal~~ cells with at least one secondary agent selected from the group consisting of parathyroid hormone, sodium fluoride, insulin-like growth factor I, insulin-like growth factor II and transforming growth factor beta.

Claim 10. (Withdrawn – Currently amended): The method of claim 6, further comprising treating the mammalian ~~mesenchymal~~ cells with at least one secondary agent selected from the group consisting of cytochrome P450 inhibitors, phospholipase activators, arachadonic acid, COX enzyme activators, osteogenic prostanoids and ERK activators.

Claim 11. (Original): The method of claim 6 wherein the biological marker is an increase in at least one of alkaline phosphatase activity, calcium incorporation, mineralization or expression of osteocalcin mRNA.

Claim 12. (Previously presented): The method of claim 6 wherein the mammalian cells are selected from the group consisting of MSCs, osteoprogenitor cells and calvarial organ cultures.

Claim 13 - Claim 41: (Canceled)